PATENT
Attorney's Docket No. 0050-0159

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of:	)	**Mail Stop Appeal Brief – Patents**
	)	
Yoshinori TAKASAKI	)	Group Art Unit: 2616
	)	
Application No.: 09/931,922	)	Examiner: C. Grey
	)	
Filed: August 20, 2001	)	
	)	
For: ROUTE CONTOL SYSTEM AND ROUTE CONTROL METHOD IN A SWITCHING APPARATUS	)	

APPEAL BRIEF

U.S. Patent and Trademark Office
Customer Window, Mail Stop Appeal Brief – Patents
Randolph Building
401 Dulany Street
Alexandria, Virginia 22314

Sir:

This Appeal Brief is submitted in response to the final Office Action, dated May 29, 2008, and in support of the Notice of Appeal, filed August 28, 2008.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Juniper Networks, Inc.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals, interferences or judicial proceedings.

III. STATUS OF CLAIMS

Claims 1-20 are pending in this application and stand rejected. Claims 1-20 are the subject of the present appeal.

IV. STATUS OF AMENDMENTS

No Amendment has been filed subsequent to the final Office Action, dated May 29, 2008.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

In the paragraphs that follow, a concise explanation of the independent claims, each dependent claim argued separately, and the claims reciting means-plus-function or step-plus-function language that are involved in this appeal will be provided by referring, in parenthesis, to examples of where support can be found in the specification and drawings.

Claim 1 is directed to a route monitor control system comprising a plurality of OAM cell handlers (OCHs) (e.g., 4, Fig. 1); a plurality of virtual path handlers (VPHs) (e.g., 1, Fig. 1; page 6, lines 9-11); a plurality of virtual channel handlers (VCHs) (e.g., 2, Fig. 1); a plurality of trunks (e.g., 3, Fig. 1); and a control unit (e.g., 5, Fig. 1) configured to issue an OAM (operation and maintenance) cell send instruction to a first one of the plurality of OAM cell handlers (e.g., page 7, lines 22-25), control the first OAM cell handler to carry out a loop back control test to at least one of the virtual path handlers, at least one of the virtual channel handlers, and at least one of the trunks, which are associated with the first OAM cell handler in response to the OAM cell send instruction (e.g., page 7, line 25 to page 8, line 3), and when the first OAM cell handler

sends out an OAM cell in response to the OAM cell send instruction, determine a fault position based on returning or non-returning of the OAM cell to the first OAM cell handler (e.g., page 7, lines 7-18 and page 8, lines 4-17).

Claim 2 recites that the control unit is further configured to carry out a switching operation of a route from at least one of the virtual path handlers to at least one of the trunks for fault avoidance based on the determined fault position (e.g., page 7, lines 11-15).

Claim 3 recites that the plurality of OAM cell handlers, the plurality of virtual path handlers, the plurality of virtual channel handlers, the plurality of trunks, and the control unit are contained in an ATM (asynchronous transfer mode) switching apparatus (e.g., page 3, lines 18-22).

Claim 7 is directed to a route monitor control method comprising issuing an OAM (operation and maintenance) cell send instruction to a specific one of a plurality of OAM cell handlers (e.g., page 7, lines 22-24); carrying out a loop back control test to at least one of a plurality of path handlers, at least one of a plurality of channel handlers, and a trunk, which are associated with the specific OAM cell handler, in response to the OAM cell send instruction (e.g., page 7, line 25 to page 8, line 3); sending out an OAM cell from the specific OAM cell handler in response to the OAM cell send instruction (e.g., page 8, lines 4-11); and determining a fault position based on returning or non-returning of the OAM cell to the specific OAM cell handler (e.g., page 7, lines 7-18 and page 8, lines 12-17).

Claim 8 recites carrying out a route switching operation for fault avoidance based on the determined fault position (e.g., page 7, lines 11-15).

Claim 10 recites that the path handlers, the channel handlers, the trunk, and the specific

OAM cell handler are contained in an ATM (asynchronous transfer mode) switching apparatus (e.g., page 3, lines 18-22).

Claim 12 recites that the carrying out comprises carrying out said loop back control test to all of said path handlers, said channel handlers, and said trunk in response to said OAM cell send instruction (e.g., page 3, line 26 to page 4, line 9), and said sending out comprises sending out OAM cells from said specific OAM cell handler in response to said OAM cell send instruction (e.g., page 3, line 26 to page 4, line 9).

Claim 13 is directed to a system comprising a plurality of testing devices (e.g., 4, Fig. 1); a plurality of path handlers (e.g., 1, Fig. 1); a plurality of channel handlers (e.g., 2, Fig. 1); a plurality of trunks (e.g., 3, Fig. 1); and a control unit (e.g., 5, Fig. 1) configured to issue an instruction to a first one of the plurality of testing devices, the instruction indicating that the first testing device is to perform a loopback control test (e.g., page 7, line 22 to page 8, line 3), wherein the first testing device is configured to receive the instruction (e.g., page 7, lines 22-23), send test data to at least one of the path handlers, channel handlers or trunks in response to the instruction (e.g., page 7, lines 7-9 and page 8, lines 4-11), receive back at least some of the test data (e.g., page 7, lines 9-18 and page 8, lines 4-9), and forward results of the loopback control test to the control unit (e.g., page 8, lines 9-11), wherein the control unit is further configured to identify a fault based on the forwarded results (e.g., page 8, lines 12-17).

Claim 18 recites that the control unit is configured to forward loopback control test initiation instructions to the plurality of the testing devices (e.g., page 8, lines 21-27).

Claim 20 recites that the plurality of path handlers, the plurality of channel handlers and the plurality of trunks are contained in a single switching apparatus (e.g., page 3, lines 18-22).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 3-7, and 9-19 stand rejected under 35 U.S.C. § 102(e) as anticipated by Nagata et al. (U.S. Patent No. 6,269,083; hereinafter "NAGATA").

B. Claims 2 and 8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over NAGATA in view of Hsing et al. (U.S. Patent No. 6,167,025; hereinafter "HSING").

C. Claim 20 stands rejected under 35 U.S.C. § 103(a) as unpatentable over NAGATA in view of Hiscock et al. (U.S. Patent No. 6,347,073; hereinafter "HISCOCK").

VII. ARGUMENT

A. The rejection of claims 1, 3-7, and 9-19 under 35 U.S.C. § 102(e) as anticipated by NAGATA should be reversed.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention. Any feature not directly taught must be inherently present. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987).

1. Claims 1 and 4-6.

Claim 1 is directed to a route monitor control system that includes a plurality of OAM cell handlers (OCHs); a plurality of virtual path handlers (VPHs); a plurality of virtual channel handlers (VCHs); a plurality of trunks; and a control unit. The control unit is configured to issue an OAM (operation and maintenance) cell send instruction to a first one of the plurality of OAM cell handlers; control the first OAM cell handler to carry out a loop back control test to at least

one of the virtual path handlers, at least one of the virtual channel handlers, and at least one of the trunks, which are associated with the first OAM cell handler in response to the OAM cell send instruction; and when the first OAM cell handler sends out an OAM cell in response to the OAM cell send instruction, determine a fault position based on returning or non-returning of the OAM cell to the first OAM cell handler. NAGATA does not disclose or suggest this combination of features.

For example, NAGATA does not disclose or suggest a route monitor control system comprising a plurality of virtual path handlers (VPHs) and a plurality of virtual channel handlers (VCHs). The Examiner relies on elements 13 and 51 in Fig. 14 of NAGATA as allegedly corresponding to the recited plurality of VPHs, and elements 14 and 52 in Fig. 14 of NAGATA as allegedly corresponding to the recited plurality of VCHs (final Office Action, p. 4). Appellant disagrees with the Examiner's interpretation of NAGATA.

Elements 13, 14, 51, and 52 in Fig. 14 of NAGATA correspond to different exchanges along a route from one subscriber terminal to another subscriber terminal (col. 19, lines 40-47). NAGATA discloses that the exchanges are network elements (col. 6, lines 34-38). Contrary to the Examiner's allegation, NAGATA does not disclose or suggest that exchanges 13 and 51 correspond to or include a plurality of VPHs or that exchanges 14 and 52 correspond to or include a plurality of VCHs. The Examiner supports this allegation by pointing to col. 1, lines 5-15, of NAGATA (final Office Action, p. 4). Appellant submits that this section of NAGATA does not support the Examiner's allegation.

At col. 1, lines 5-15, NAGATA discloses:

(1) Field of the Invention

> The present invention relates to an ATM (Asynchronous Transfer Mode) network communication route monitoring system, and more particularly to a communication route monitoring system for monitoring a communication route, using OAM (Operation And Maintenance) loopback cells, in an ATM network which is made up of virtual paths (VP) or virtual channels (VC) and a plurality of communication devices for terminating or relaying the virtual paths or virtual channels.

This section of NAGATA merely discloses that an ATM network is made up of virtual paths or virtual channels. This section of NAGATA in no way discloses or suggests that exchanges 13 and 51 correspond to or include a plurality of VPHs or that exchanges 14 and 52 correspond to or include a plurality of VCHs. In fact, this section of NAGATA does not even mention exchanges 13, 14, 51, and 52.

Moreover, this section of NAGATA actually teaches away from the Examiner's interpretation of NAGATA by specifically disclosing that the ATM network is made up of virtual paths or virtual channels. Thus, NAGATA's ATM network would not reasonably be construed as disclosing both a plurality of VPHs and a plurality of VCHs, as recited in claim 1.

The Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed exchanges 13 and 51 and exchanges 14 and 52 of NAGATA as corresponding to a plurality of VPHs and a plurality of VCHs, respectively. Thus, the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 1.

NAGATA does not further disclose or suggest a plurality of trunks, as also recited in claim 1. The Examiner relies on elements 16 and 53 in Fig. 14 of NAGATA as allegedly corresponding to this feature (final Office Action, p. 4). Appellant disagrees with the Examiner's interpretation of NAGATA.

Elements 16 and 53 in Fig. 14 of NAGATA correspond to subscriber terminals (see Fig. 14). NAGATA in no way discloses or suggests that subscriber terminals 16 and 53 correspond to or include trunks. As support for this allegation, the Examiner alleges that "trunks from the applicants spec are merely the termination points of a connection" (final Office Action, p. 4). Appellant submit that this allegation mischaracterizes Appellant's disclosure.

Contrary to the Examiner's allegation, Appellant's specification does not disclose that trunks are termination points of a connection. Instead, Appellant's specification specifically discloses that "trunk 3 may be TE (Terminal Equipment) as the unit which carries out the relay of VC" (emphasis added). Thus, Appellant's trunk (as that term is known in the art) may carry out the relay of a virtual channel. In stark contrast, NAGATA's subscriber terminals 16 and 53 appear to correspond to end points of a path and not trunks.

The Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed subscriber terminals 16 and 53 of NAGATA as corresponding to a plurality of trunks, as recited in claim 1. Thus, the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 1.

Since NAGATA does not disclose or suggest a plurality of VPHs, a plurality of VCHs, and a plurality of trunks, NAGATA cannot disclose or suggest a control unit configured to issue an OAM (operation and maintenance) cell send instruction to a first one of the plurality of OAM cell handlers, control the first OAM cell handler to carry out a loop back control test to at least one of the virtual path handlers, at least one of the virtual channel handlers, and at least one of the trunks, which are associated with the first OAM cell handler in response to the OAM cell send instruction, and when the first OAM cell handler sends out an OAM cell in response to the

OAM cell send instruction, determine a fault position based on returning or non-returning of the OAM cell to the first OAM cell handler, as also recited in claim 1. The Examiner relies on element 36 in Fig. 5 of NAGATA for allegedly corresponding to the recited control unit (final Office Action, p. 4). Appellant disagrees with the Examiner's interpretation of NAGATA.

NAGATA discloses that maintenance interface controller 36 receives maintenance interface information from a maintenance console 35 and sends an OAM cell transmission request to an OAM cell transmission control unit 37a (col. 12, lines 35-40). OAM cell transmission control unit 37a sends an OAM cell transmission request to OAM cell transmitter 33a, which transmits the OAM loopback cell to the path route (col. 12, lines 40-52). NAGATA does not disclose or suggest that maintenance interface controller 36 issues an OAM cell send instruction to a first OAM cell handler and controls the first OAM cell handler to carry out a loopback control test to at least one of the VPHs, at leas one of the VCHs, and at least one of the trunks associated with the first OAM cell handler, as recited in claim 1. In contrast, maintenance interface controller 36 merely forwards information associated with transmitting a general OAM loopback cell on a path route.

In other words, the testing performed by NAGATA is directed to testing a path/route in an ATM network to an ATM endpoint that interfaces with a subscriber terminal. Claim 1, in contrast, recites that the control unit is configured to control a first OAM cell handler to carry out a loop back control test to at least one of the VPHs, at least one of the VCHs, and at least one of the trunks. That is, the testing performed in claim 1 is directed to testing VPHs, VCHs, and trunks. NAGATA, as discussed above and in contrast to claim 1, merely discloses testing a path from one exchange to another exchange. This general path testing performed in NAGATA

cannot be reasonably construed to disclose or suggest the specifically recited loop back control test to at least one of the VPHs, at least one of the VCHs, and at least one of the trunks, as recited in claim 1.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 1 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 1 be reversed.

Claims 4-6 depend from claim 1. Therefore, Appellant submits that the rejection of claims 4-6 under 35 U.S.C. § 102(e) based on NAGATA is improper for at least the reasons given above with respect to claim 1. Accordingly, Appellants request that the rejection of claims 4-6 be reversed.

2. Claim 3.

Claim 3 depends from claim 1. Therefore, this claim is not anticipated by NAGATA for at least the reasons given above with respect to claim 1. Moreover, this claim recites an additional feature not disclosed or suggested by NAGATA.

For example, claim 3 recites that the plurality of OAM cell handlers, the plurality of virtual path handlers, the plurality of virtual channel handlers, the plurality of trunks, and the control unit are contained in an ATM switching apparatus. The Examiner relies on Fig. 5 of NAGATA for allegedly depicting the recited ATM switching apparatus (final Office Action, p. 5). Appellant disagrees with the Examiner's interpretation of NAGATA.

Fig. 5 of NAGATA depicts the contents of an ATM exchange function block 31. As set forth above with respect to claim 1, the Examiner alleges that NAGATA's exchanges 13 and 51 correspond to the recited plurality of VPHs, NAGATA's exchanges 14 and 52 correspond to the

recited plurality of VCHs, and NAGATA's subscriber terminals 16 and 53 correspond to the recited plurality of trunks (final Office Action, p. 4). Assuming that these interpretations are reasonable (a point with which Appellant does not agree for at least the reasons given above), Appellant submits that NAGATA does not disclose or suggest that exchanges 13 and 51, exchanges 14 and 52, and subscriber terminals 16 and 53 are contained in ATM exchange function block 31, as would be required of NAGATA based on the Examiner's interpretation of claim 3.

The Examiner provides no explanation as to why one skilled in the art would reasonably construe NAGATA's ATM exchange function block 31 as containing a plurality of VPHs, a plurality of VCHs, and a plurality of trunks. Accordingly, Appellant submits that the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 3.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 3 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 3 be reversed.

3. Claims 7, 9, and 11.

Claim 7 is directed to a route monitor control method that includes issuing an OAM (operation and maintenance) cell send instruction to a specific one of a plurality of OAM cell handlers; carrying out a loop back control test to at least one of a plurality of path handlers, at least one of a plurality of channel handlers, and a trunk, which are associated with the specific OAM cell handler, in response to the OAM cell send instruction; sending out an OAM cell from the specific OAM cell handler in response to the OAM cell send instruction; and determining a fault position based on returning or non-returning of the OAM cell to the specific OAM cell

handler. NAGATA does not disclose or suggest this combination of features.

For example, NAGATA does not disclose or suggest carrying out a loop back control test to at least one of a plurality of path handlers, at least one of a plurality of channel handlers, and a trunk, which are associated with the specific OAM cell handler, in response to the OAM cell send instruction. The Examiner relies on elements 13 and 51 in Fig. 14 of NAGATA as allegedly corresponding to the recited at least one of a plurality of path handlers, elements 14 and 52 in Fig. 14 of NAGATA as allegedly corresponding to the recited at least one of a plurality of channel handlers, elements 16 and 53 in Fig. 14 of NAGATA for allegedly corresponding to the trunk, and on col. 12, lines 35-52, of NAGATA for allegedly disclosing the above feature of claim 7 (final Office Action, pp. 6-7). Appellant disagrees with the Examiner's interpretation of NAGATA.

Elements 13, 14, 51, and 52 in Fig. 14 of NAGATA correspond to different exchanges along a route from one subscriber terminal to another subscriber terminal (col. 19, lines 40-47). NAGATA discloses that the exchanges are network elements (col. 6, lines 34-38). Contrary to the Examiner's allegation, NAGATA does not disclose or suggest that exchanges 13 and 51 correspond to or include at least one of a plurality of path handlers or that exchanges 14 and 52 correspond to or include at least one of a plurality of channel handlers. In fact, as set forth above with respect to claim 1, NAGATA specifically discloses that an ATM network is made up of virtual paths or virtual channels. Thus, NAGATA's ATM network would not reasonably be construed as disclosing both at least one of a plurality of path handlers and at least one of a plurality of channel handlers, as recited in claim 7.

The Examiner provides no explanation as to why one skilled in the art at the time of

Appellant's invention would have reasonably construed exchanges 13 and 51 and exchanges 14 and 52 of NAGATA as corresponding to at least one of a plurality of path handlers and at least one of a plurality of channel handlers, respectively. Thus, the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 7.

In addition, elements 16 and 53 in Fig. 14 of NAGATA correspond to subscriber terminals (see Fig. 14). NAGATA in no way discloses or suggests that subscriber terminals 16 and 53 correspond to or include a trunk.

The Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed subscriber terminals 16 and 53 of NAGATA as corresponding to a trunk, as recited in claim 7. Thus, the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 7.

At col. 12, lines 35-52, NAGATA discloses that maintenance interface controller 36 receives maintenance interface information from a maintenance console 35 and sends an OAM cell transmission request to an OAM cell transmission control unit 37a (col. 12, lines 35-40). OAM cell transmission control unit 37a sends an OAM cell transmission request to OAM cell transmitter 33a, which transmits the OAM loopback cell to the path route (col. 12, lines 40-52). This section of NAGATA does not disclose or suggest carrying out a loop back control test to at least one of a plurality of path handlers, at least one of a plurality of channel handlers, and a trunk, which are associated with the specific OAM cell handler, in response to the OAM cell send instruction, as recited in claim 7. In contrast, NAGATA merely discloses that maintenance interface controller 36 forwards information associated with transmitting a general OAM loopback cell on a path route.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 7 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 7 be reversed.

Claims 9 and 11 depend from claim 7. Therefore, Appellant submits that the rejection of claims 9 and 11 under 35 U.S.C. § 102(e) based on NAGATA is improper for at least the reasons given above with respect to claim 7. Accordingly, Appellants request that the rejection of claims 9 and 11 be reversed.

4. Claim 10.

Claim 10 depends from claim 7. Therefore, this claim is not anticipated by NAGATA for at least the reasons given above with respect to claim 7. Moreover, this claim recites an additional feature not disclosed or suggested by NAGATA.

For example, claim 10 recites that the path handlers, the channel handlers, the trunk, and the specific OAM cell handler are contained in an ATM switching apparatus. The Examiner relies on Fig. 5 of NAGATA for allegedly depicting the recited ATM switching apparatus (final Office Action, pp. 7-8). Appellant disagrees with the Examiner's interpretation of NAGATA.

Fig. 5 of NAGATA depicts the contents of an ATM exchange function block 31. As set forth above with respect to claim 7, the Examiner alleges that NAGATA's exchanges 13 and 51 correspond to the recited path handlers, NAGATA's exchanges 14 and 52 correspond to the recited channel handlers, and subscriber terminals 16 and 53 correspond to the recited plurality of trunk (final Office Action, pp. 6-7). Assuming that these interpretations are reasonable (a point with which Appellant does not agree for at least the reasons given above), Appellant submits that NAGATA does not disclose or suggest that exchanges 13 and 51, exchanges 14 and

52, and subscriber terminals 16 and 53 are contained in ATM exchange function block 31, as would be required of NAGATA based on the Examiner's interpretation of claim 10.

The Examiner provides no explanation as to why one skilled in the art would reasonably construe NAGATA's ATM exchange function block 31 as containing path handlers, channel handlers, and a trunk. Accordingly, Appellant submits that the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 10.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 10 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 10 be reversed.

5. Claim 12.

Claim 12 depends from claim 7. Therefore, this claim is not anticipated by NAGATA for at least the reasons given above with respect to claim 7. Moreover, this claim recites an additional feature not disclosed or suggested by NAGATA.

For example, claim 12 recites that the carrying out a loop back control test includes carrying out the loop back control test to all of the path handlers, the channel handlers, and the trunk in response to the OAM cell send instruction, and the sending out comprises sending out OAM cells from the specific OAM cell handler in response to the OAM cell send instruction. NAGATA does not disclose or suggest this combination of features.

For example, NAGATA does not disclose or suggest carrying out the loop back control test to all of the path handlers, the channel handlers, and the trunk in response to the OAM cell send instruction. The Examiner relies on col. 12, lines 35-52, of NAGATA for allegedly disclosing this feature (final Office Action, p. 8). Appellant disagrees with the Examiner's

interpretation of NAGATA.

At col. 12, lines 35-52, NAGATA discloses that maintenance interface controller 36 receives maintenance interface information from a maintenance console 35 and sends an OAM cell transmission request to an OAM cell transmission control unit 37a (col. 12, lines 35-40). OAM cell transmission control unit 37a sends an OAM cell transmission request to OAM cell transmitter 33a, which transmits the OAM loopback cell to the path route (col. 12, lines 40-52). This section of NAGATA does not disclose or suggest carrying out the loop back control test to all of the path handlers, the channel handlers, and the trunk in response to the OAM cell send instruction, as recited in claim 12. In fact, as set forth above with respect to claim 7, NAGATA does not even disclose path handlers, channel handlers, and a trunk.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 12 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 12 be reversed.

6. Claims 13-17 and 19.

Claim 13 is directed to a system that includes a plurality of testing devices; a plurality of path handlers; a plurality of channel handlers; a plurality of trunks; and a control unit. The control unit is configured to issue an instruction to a first one of the plurality of testing devices, the instruction indicating that the first testing device is to perform a loopback control test. The first testing device is configured to receive the instruction, send test data to at least one of the path handlers, channel handlers or trunks in response to the instruction, receive back at least some of the test data, and forward results of the loopback control test to the control unit. The control unit is further configured to identify a fault based on the forwarded results. NAGATA

does not disclose or suggest this combination of features.

For example, NAGATA does not disclose or suggest a plurality of path handlers and a plurality of channel handlers. The Examiner relies on elements 13 and 51 in Fig. 14 of NAGATA as allegedly corresponding to the recited plurality of path handlers, and elements 14 and 52 in Fig. 14 of NAGATA as allegedly corresponding to the recited plurality of channel handlers (final Office Action, p. 9). Appellant disagrees with the Examiner's interpretation of NAGATA.

Elements 13, 14, 51, and 52 in Fig. 14 of NAGATA correspond to different exchanges along a route from one subscriber terminal to another subscriber terminal (col. 19, lines 40-47). NAGATA discloses that the exchanges are network elements (col. 6, lines 34-38). Contrary to the Examiner's allegation, NAGATA does not disclose or suggest that exchanges 13 and 51 correspond to or include a plurality of path handlers or that exchanges 14 and 52 correspond to or include a plurality of channel handlers. The Examiner supports this allegation by pointing to col. 1, lines 5-15, of NAGATA (final Office Action, p. 9). Appellant submits that this section of NAGATA does not support the Examiner's allegation.

Col. 1, lines 5-15, of NAGATA is reproduced above. This section of NAGATA discloses that an ATM network is made up of virtual paths or virtual channels. This section of NAGATA in no way discloses or suggests that exchanges 13 and 51 correspond to or include a plurality of path handlers or that exchanges 14 and 52 correspond to or include a plurality of channel handlers. In fact, this section of NAGATA does not even mention exchanges 13, 14, 51, and 52.

Moreover, this section of NAGATA actually teaches away from the Examiner's

interpretation of NAGATA by specifically disclosing that the ATM network is made up of virtual paths or virtual channels. Thus, NAGATA's ATM network would not reasonably be construed as disclosing both a plurality of path handlers and a plurality of channel handlers, as recited in claim 13.

The Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed exchanges 13 and 51 and exchanges 14 and 52 of NAGATA as corresponding to a plurality of path handlers and a plurality of channel handlers, respectively. Thus, the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 13.

NAGATA does not further disclose or suggest a plurality of trunks, as also recited in claim 13. The Examiner relies on elements 16 and 53 in Fig. 14 of NAGATA as allegedly corresponding to this feature (final Office Action, p. 9). Appellant disagrees with the Examiner's interpretation of NAGATA.

Elements 16 and 53 in Fig. 14 of NAGATA correspond to subscriber terminals (see Fig. 14). NAGATA in no way discloses or suggests that subscriber terminals 16 and 53 correspond to or include a plurality of trunks. As support for this allegation, the Examiner alleges that "trunks from the applicants spec are merely the termination points of a connection" (final Office Action, p. 9). Appellant submit that this allegation mischaracterizes Appellant's disclosure.

Contrary to the Examiner's allegation, Appellant's specification does not disclose that trunks are termination points of a connection. Instead, Appellant's specification specifically discloses that "trunk 3 may be TE (Terminal Equipment) as the unit which carries out the relay of VC" (emphasis added). Thus, Appellant's trunk (as that term is known in the art) carries out

the relay of a virtual channel. In stark contrast, NAGATA's subscriber terminals 16 and 53 appear to correspond to end points of a path and not a plurality of trunks.

The Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed subscriber terminals 16 and 53 of NAGATA as corresponding to a plurality of trunks, as recited in claim 13. Thus, the Examiner has not established a *prima facie* basis for denying patentability with respect to claim 13.

Since NAGATA does not disclose or suggest a plurality of path handlers, a plurality of channel handlers, and a plurality of trunks, NAGATA cannot disclose or suggest a first testing device that is configured to send test data to at least one of the path handlers, at least one of the channel handlers, or trunks in response to the instruction, as also recited in claim 13. The Examiner relies on col. 12, lines 35-52, of NAGATA for allegedly disclosing this feature (final Office Action, pp. 9-10). Appellant disagrees with the Examiner's interpretation of NAGATA.

At col. 12, lines 35-52, NAGATA discloses that maintenance interface controller 36 receives maintenance interface information from a maintenance console 35 and sends an OAM cell transmission request to an OAM cell transmission control unit 37a (col. 12, lines 35-40). OAM cell transmission control unit 37a sends an OAM cell transmission request to OAM cell transmitter 33a, which transmits the OAM loopback cell to the path route (col. 12, lines 40-52). This section of NAGATA does not disclose or suggest a first testing device that is configured to send test data to at least one of the path handlers, at least one of the channel handlers or trunks in response to the instruction, as recited in claim 13. In fact, as set forth above, NAGATA does not even disclose path handlers, channel handlers, or trunks.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 13 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 13 be reversed.

Claims 14-17 and 19 depend from claim 13. Therefore, Appellant submits that the rejection of claims 14-17 and 19 under 35 U.S.C. § 102(e) based on NAGATA is improper for at least the reasons given above with respect to claim 13. Accordingly, Appellants request that the rejection of claims 14-17 and 19 be reversed.

7. Claim 18.

Claim 18 depends from claim 13. Therefore, this claim is not anticipated by NAGATA for at least the reasons given above with respect to claim 13. Moreover, this claim recites an additional feature not disclosed or suggested by NAGATA.

For example, claim 18 recites that the control unit is configured to forward loopback control test initiation instructions to the plurality of testing devices. The Examiner relies on col. 12, lines 35-52, of NAGATA for allegedly disclosing this feature (final Office Action, p. 11). Appellant disagrees with the Examiner's interpretation of NAGATA.

At col. 12, lines 35-52, NAGATA discloses that maintenance interface controller 36 receives maintenance interface information from a maintenance console 35 and sends an OAM cell transmission request to an OAM cell transmission control unit 37a (col. 12, lines 35-40). OAM cell transmission control unit 37a sends an OAM cell transmission request to OAM cell transmitter 33a, which transmits the OAM loopback cell to the path route (col. 12, lines 40-52). This section of NAGATA does not disclose or suggest that the control unit is configured to forward loopback control test initiation instructions to the plurality of testing devices, as recited

in claim 18. In contrast, this portion of NAGATA merely discloses sending a single OAM cell transmission request from maintenance interface controller 36 to ATM cell transmitter 33 via a number of intermediate devices. These intermediate devices, however, are not equivalent to a plurality of testing devices. Therefore, NAGATA cannot be fairly construed to disclose or suggest a control unit configured to forward loopback control test initiation instructions to a plurality of testing devices, as recited in claim 18.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 18 under 35 U.S.C. § 102(e) based on NAGATA is improper. Therefore, Appellant respectfully requests that the rejection of claim 18 be reversed.

B. The rejection of claims 2 and 8 under 35 U.S.C. § 103(a) as unpatentable over NAGATA in view of HSING should be reversed.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 U.S.P.Q. 173 (C.C.P.A. 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S. Ct. 684, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). KSR International Co. v. Teleflex Inc., 550 U.S. _____ (April 30, 2007). The Examiner is also required to explain how and why one having ordinary skill in the art would have been realistically motivated to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

1. Claim 2.

Claim 2 depends from claim 1. While not acquiescing in the rejection of claim 2, Appellant submits that the disclosure of HSING does not remedy the deficiencies in the disclosure of NAGATA set forth above with respect to claim 1. Therefore, Appellant submits that claim 2 is patentable over NAGATA and HSING, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1. Accordingly, Appellant respectfully requests that the rejection of claim 2 under 35 U.S.C. § 103(a) based on NAGATA and HSING be reversed. Moreover, this claim is patentable over NAGATA and HSING for reasons of its own.

Claim 2 recites that the control unit is further configured to carry out a switching operation of a route from at least one of the virtual path handlers to at least one of the trunks for fault avoidance based on the determined fault position. The Examiner admits that NAGATA does not disclose this feature and relies on col. 4, lines 30-40, of HSING for allegedly disclosing this feature (final Office Action, p. 12). Appellant disagrees with the Examiner's interpretation of HSING.

At col. 4, lines 30-40, HSING discloses:

> Various embodiments of the present invention utilize the capabilities of ATM switches to perform routing and connection setup operations to re-route network traffic around a failed link or node. In accordance with one embodiment of the present invention VPI/VCI values for virtual connections between switches established to re-route network traffic around failed nodes or links are assigned at the time of re-routing as opposed to the time at which a connection between a source and destination device is first established. Thus, the potential problem of VPI/VCI exhaustion present in some known restoration techniques is avoided.

This section of HSING discloses that VPI/VCI values are assigned, for virtual connections between switches established to re-route network traffic around failed nodes or links, at the time

of re-routing as opposed to the time at which a connection between a source and destination device is first established, thereby avoiding the potential problem of VPI/VCI exhaustion. This section of HSING does not relate to a control unit that is configured to carry out a switching operation of a route from at least one of the virtual path handlers to at least one of the trunks for fault avoidance based on the determined fault position, as recited in claim 2. In fact, this section of HSING does not even mention virtual path handlers or trunks.

Moreover, the Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed the above section of HSING as disclosing a control unit that is configured to carry out a switching operation of a route from at least one of the virtual path handlers to at least one of the trunks for fault avoidance based on the determined fault position, as recited in claim 2. Thus, a *prima facie* case of obviousness has not been established with respect to claim 2.

Further with respect to the above feature of claim 2, the Examiner alleges:

> [i]t would have been obvious … to modify the ATM exchanges of Nagata, as taught by Hsing, since stated in the title, that such a modification will allow restoring of a connection in an ATM network

(final Office Action, p. 12). Appellant submits that the Examiner's allegation is merely a conclusory statement regarding what the Examiner believes to be an alleged benefit of the combination. Such motivation statements have consistently been found to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellant relies upon KSR International Co. v. Teleflex Inc., 550 U.S. _____ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with

some rational underpinning to support the legal conclusion of obviousness. The Examiner does not provide the articulated reasoning required by KSR International Co.

Appellant submits that incorporating HSING's assignments of VPI/VCI values for virtual connections between switches established to re-route network traffic around failed nodes or links into the NAGATA system, would result, at most, in the ability of NAGATA's system to have a virtual path or virtual channel ready for re-routing traffic in the event that a failure occurs on a primary route. In any event, such a combination would not result in a control unit that is configured to carry out a switching operation of a route from at least one of the virtual path handlers to at least one of the trunks for fault avoidance based on the determined fault position, as recited in claim 2. Appellant submits that the Examiner's purported motivation to combine the cited references is merely conclusory and based on impermissible hindsight. Accordingly, a *prima facie* case of obviousness has not been established with respect to claim 2.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 2 under 35 U.S.C. § 103(a) based on NAGATA and HSING is improper. Therefore, Appellant respectfully requests that the rejection of claim 2 be reversed.

2. Claim 8.

Claim 8 depends from claim 7. While not acquiescing in the rejection of claim 8, Appellant submits that the disclosure of HSING does not remedy the deficiencies in the disclosure of NAGATA set forth above with respect to claim 7. Therefore, Appellant submits that claim 8 is patentable over NAGATA and HSING, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 7. Accordingly, Appellant respectfully requests that the rejection of claim 8 under 35 U.S.C. § 103(a) based on

NAGATA and HSING be reversed.

C. The rejection of claim 20 under 35 U.S.C. § 103(a) as unpatentable over NAGATA in view of HISCOCK should be reversed.

1. Claim 20.

Claim 20 depends from claim 13. While not acquiescing in the rejection of claim 20, Appellant submits that the disclosure of HISCOCK does not remedy the deficiencies in the disclosure of NAGATA set forth above with respect to claim 13. Therefore, Appellant submits that claim 20 is patentable over NAGATA and HISCOCK, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 13. Accordingly, Appellant respectfully requests that the rejection of claim 20 under 35 U.S.C. § 103(a) based on NAGATA and HISCOCK be reversed. Moreover, this claim is patentable over NAGATA and HISCOCK for reasons of its own.

Claim 20 recites that the plurality of path handlers, the plurality of channel handlers, and the plurality of trunks are contained in a single switching apparatus. The Examiner admits that NAGATA does not disclose this feature and relies on element 20 in Fig. 1 of HISCOCK and col. 3, lines 18-21, of HISCOCK for allegedly disclosing this feature (final Office Action, p. 13). Appellant disagrees with the Examiner's interpretation of HISCOCK.

Element 20 in Fig. 1 of HISCOCK corresponds to a primary/backup switch pair. Neither this figure of HISCOCK nor the description thereof discloses or suggests a plurality of path handlers, a plurality of channel handlers, and a plurality of trunks that are contained in a single switching apparatus, as recited in claim 20. In fact, HISCOCK does not even mention paths, channels, or trunks. Thus, HISCOCK cannot disclose or suggest the above feature of claim 20.

At col. 3, lines 18-22, HISCOCK discloses:

> Referring to the drawings, and in particular to FIG. 1, the invention comprises a Logical Switch Set (LSS) 20 which comprises two or more switches 22 that together act as a single packet forwarding device with specific connection rules.

This section of HSING discloses a logical switch set 20 that includes two or more switches 22 that act as a single packet forwarding device. This section of HISCOCK does not relate to a plurality of path handlers, a plurality of channel handlers, and a plurality of trunks that are contained in a single switching apparatus, as recited in claim 20. In fact, as indicated above, this section of HISCOCK does not even mention paths, channels, or trunks.

Moreover, the Examiner provides no explanation as to why one skilled in the art at the time of Appellant's invention would have reasonably construed the above sections of HISCOCK as disclosing a plurality of path handlers, a plurality of channel handlers, and a plurality of trunks that are contained in a single switching apparatus, as recited in claim 20. Thus, a *prima facie* case of obviousness has not been established with respect to claim 20.

Further with respect to the above feature of claim 20, the Examiner alleges:

> [i]t would have been obvious … to modify the system of Nagata, as taught by Hiscock, since stated in the abstract that such a modification will allow redundancy within the device in the event of a failure or fault of some sort

(final Office Action, p. 13). Appellant submits that the Examiner's allegation is merely a conclusory statement regarding what the Examiner believes to be an alleged benefit of the combination. Such motivation statements have consistently been found to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellant relies upon KSR International Co. v. Teleflex Inc., 550 U.S. _____ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be

sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. The Examiner does not provide the articulated reasoning required by KSR International Co.

Appellant submits that incorporating HISCOCK's redundant switches into the NAGATA system, would result, at most, in the ability of NAGATA's system to move traffic to a backup switch in the event that a primary switch fails. In any event, such a combination would not result in a single switching apparatus that contains a plurality of path handlers, a plurality of channel handlers, and a plurality of trunks, as recited in claim 20. Appellant submits that the Examiner's purported motivation to combine the cited references is merely conclusory and based on impermissible hindsight. Accordingly, a *prima facie* case of obviousness has not been established with respect to claim 20.

For at least the foregoing reasons, Appellant respectfully submits that the rejection of claim 20 under 35 U.S.C. § 103(a) based on NAGATA and HISCOCK is improper. Therefore, Appellant respectfully requests that the rejection of claim 20 be reversed.

VIII. CONCLUSION

In view of the foregoing arguments, Appellant respectfully solicits the Honorable Board to reverse the Examiner's rejections of claims 1-20 under 35 U.S.C. §§ 102 and 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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IX. APPENDIX

1. A route monitor control system comprising:

a plurality of OAM cell handlers (OCHs);

a plurality of virtual path handlers (VPHs);

a plurality of virtual channel handlers (VCHs);

a plurality of trunks; and

a control unit configured to:

issue an OAM (operation and maintenance) cell send instruction to a first one of said plurality of OAM cell handlers,

control said first OAM cell handler to carry out a loop back control test to at least one of said virtual path handlers, at least one of said virtual channel handlers, and at least one of said trunks, which are associated with said first OAM cell handler in response to said OAM cell send instruction, and

when said first OAM cell handler sends out an OAM cell in response to said OAM cell send instruction, determine a fault position based on returning or non-returning of the OAM cell to said first OAM cell handler.

2. The route monitor control system according to claim 1, wherein said control unit is further configured to:

carry out a switching operation of a route from at least one of said virtual path handlers to at least one of said trunks for fault avoidance based on the determined fault position.

3. The route monitor control system according to claim 1, wherein said plurality of OAM cell handlers, said plurality of virtual path handlers, said plurality of virtual channel handlers, said plurality of trunks, and said control unit are contained in an ATM (asynchronous transfer mode) switching apparatus.

4. The route monitor control system according to claim 1, wherein said control unit is further configured to:

periodically issue said OAM cell send instruction to said first OAM cell handler.

5. The route monitor control system according to claim 1, wherein said control unit is configured to:

determine the fault position based on returning or non-returning of each of the OAM cells to said first OAM cell handler.

6. The route monitor control system according to claim 1, wherein said control unit is configured to:

carry out the issuing operation, the loop back control test and the determining operation while changing said first OAM cell handler among said plurality of OAM cell handlers.

7. A route monitor control method comprising:

issuing an OAM (operation and maintenance) cell send instruction to a specific

one of a plurality of OAM cell handlers;

carrying out a loop back control test to at least one of a plurality of path handlers, at least one of a plurality of channel handlers, and a trunk, which are associated with said specific OAM cell handler, in response to said OAM cell send instruction;

sending out an OAM cell from said specific OAM cell handler in response to said OAM cell send instruction; and

determining a fault position based on returning or non-returning of the OAM cell to said specific OAM cell handler.

8. The route monitor control method according to claim 7, further comprising:

carrying out a route switching operation for fault avoidance based on the determined fault position.

9. The route monitor control method according to claim 7, wherein said carrying out a loop back control test is performed in an ATM (asynchronous transfer mode) switching apparatus.

10. The route monitor control method according to claim 7, wherein said path handlers, said channel handlers, said trunk, and said specific OAM cell handler are contained in an ATM (asynchronous transfer mode) switching apparatus.

11. The route monitor control method according to claim 7, wherein said issuing

comprises:

periodically issuing said OAM cell send instruction to said specific OAM cell handler.

12. The route monitor control method according to claim 7, wherein said carrying out comprises:

carrying out said loop back control test to all of said path handlers, said channel handlers, and said trunk in response to said OAM cell send instruction, and

said sending out comprises:

sending out OAM cells from said specific OAM cell handler in response to said OAM cell send instruction.

13. A system, comprising:

a plurality of testing devices;

a plurality of path handlers;

a plurality of channel handlers;

a plurality of trunks; and

a control unit configured to:

issue an instruction to a first one of the plurality of testing devices, the instruction indicating that the first testing device is to perform a loopback control test,

wherein the first testing device is configured to:

receive the instruction,

send test data to at least one of the path handlers, channel handlers or trunks in response to the instruction,

receive back at least some of the test data, and

forward results of the loopback control test to the control unit,

wherein the control unit is further configured to:

identify a fault based on the forwarded results.

14. The system of claim 13, wherein the control unit is configured to periodically issue the instruction to the first testing device.

15. The system of claim 13, wherein when forwarding results, the first testing device is configured to:

forward information to the control unit based on return of the test data to the first testing device.

16. The system of claim 15, wherein when identifying a fault, the control unit is configured to identify the fault based on the forwarded information.

17. The system of claim 13, wherein the control unit is further configured to:

perform a fault avoidance operation based on the identified fault.

18. The route monitor control system of claim 13, wherein the control unit is

configured to forward loopback control test initiation instructions to the plurality of the testing devices.

19. The system of claim 13, wherein the plurality of testing devices may be included in the plurality of path handlers, the plurality of channel handlers or the plurality of trunks.

20. The system of claim 13, wherein the plurality of path handlers, the plurality of channel handlers and the plurality of trunks are contained in a single switching apparatus.

X. EVIDENCE APPENDIX

None

XI. RELATED PROCEEDINGS APPENDIX

None